IMCA Safety Flash 14/15

October 2015

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links Additional links should be submitted to webmaster@imca-int.com

1 High Potential Incidents and Fatalities in 2014 – International Association of Oil & Gas Producers (IOGP)

The International Association of Oil & Gas Producers (IOGP) has published two recent reports, one on 2014 high potential incidents and the other, on 2014 fatal incidents. Some of these incidents may have lessons for IMCA members; a selection of the incidents covered in each report is highlighted here, each one from a different area of the world.

The reports can be downloaded as follows:

- Safety performance indicators – 2014 data – High potential events report http://www.ogp.org.uk/pubs/2014sh.pdf;
- Safety performance indicators – 2014 data – Fatal incidents report http://www.ogp.org.uk/pubs/2014sf.pdf.

High potential incidents

2 Fall from Height in a Confined Space

An employee fell from a ladder while descending into a well cellar to remove tie rods on the cellar wall. The initial report states that the injured person removed his safety harness hook from the ladder rung above in order to hook onto the rung below, at this point he lost balance and fell 2.5 m onto the concrete cellar floor. (Note: Safety lanyard was in use with only one snap hook). The onsite medic was informed and immediately attended the scene. Rescue trained personnel assisted the medic in the rescue/extrication. The injured person was stabilized, secured on spinal stretcher and lifted from the 5 m deep cellar using a crane, and transferred to the clinic by ambulance.

WHAT WENT WRONG:

- Conditions: Inadequate/restricted/congested workplace/environment. Inadequate/inappropriate tools/equipment;
- Actions: Inappropriate/inadequate protective methods;
- Personal Factors: Inadequate skill and/or knowledge level;
- Job Factors: Lack of/inadequate policies and procedures. Inadequate management/supervision/leadership. Inadequate tools and equipment.

Members may wish to review the following incident:

- IMCA SF 02/14 Incident. 2 – *Fatality in ballast water tank – Working at height in a confined space.*

3 Electrical Shock – Failure of Isolations and Barriers

A crew member was testing 240V cables as part of re-terminating a replacement motor. There was some isolation in place, with equipment partly out of the racks for testing by a separate crew. However, the electrical supply for a space heater was unknowingly not covered by the existing isolation in the test position. Crew member received an electrical shock whilst removing insulation from a still active 240V conductor.

WHAT WENT WRONG: Specific equipment drawing was not utilized for isolation – a generic motor drawing was used instead. Isolation integrity had not been individually assessed for different activities.

It is important to ensure that Permit to Work (PTW) and lock out/tag out procedures specify the requirement to reference equipment-specific rather than generic drawings, prior to determining the appropriate isolation.

- IMCA SF 02/10 Incident. 1 – *Crewman Received 440V Electric Shock.*

4 Crewman Struck by Sling during Anchor Handling Operations

An anchor had been transferred from one vessel to another. The crane operator slacked the sling so that it could be disconnected from the anchor. Two crewmen were walking towards the sling to disconnect it. As they were doing so, the stern of the vessel suddenly moved downwards caused by the moderate swell. As a result the attached sling was tightened very rapidly. The sling struck one of the crewmen against the upper part of his body pushing him and his colleague across the deck.

WHAT WENT WRONG:

- Adverse sea conditions. Sea conditions created a sudden big downward movement of the vessel;
- Lack of situational awareness/risk perception – the injured person proceeded too soon towards the sling, and might have avoided injury by waiting a moment to take time and assess the situation.

In this case the contractor changed procedures and required rigging crew to wear and use helmets with head-set communication to the bridge, providing better environmental awareness and support from the bridge in cases like this where alerts of extreme wave movements could be provided.

5 Dropped Object Near Miss: Lifting

During the lifting of twelve lightweight steel plates (2m × 15-30cm) width from ground level to a vessel work platform at 35 m elevation, the load shifted during the transfer to the work platform causing the plates to fall into a barricaded area below. The barricaded area was free from workers at the time; there were no injuries.

WHAT WENT WRONG:

- Obstruction/cramped workspace: The receiving area was obstructed by a scaffold rail and ladder which restricted the work space and made handling of the load awkward;
- There was a lack of management support: The Mechanical Supervisor and Lifting Supervisor failed to ensure that the scaffold design at an early stage was such that it facilitated the delivery of loads;
- Complacency: the rigging foreman, despite being fully qualified and competent for his position, failed to investigate alternative options to transfer the load (platform/scaffold modification, separating the load out into various sizes, use of a material lifting basket etc.);
- Short cut taken: The riggers and rigging foreman had taken a short cut and combined mixed sizes of steel plates into one load instead of separating out the load into various sizes or utilizing a material basket or modifying the scaffold in the receiving area to receive the load;
- There was no proper risk assessment of movement of the mixed load during transfer;
- There had been no proper toolbox talk before the job started with a new crew, and one rigger falsely signed as having attended the safety task instruction with the crew.

6 Dropped Object Near Miss: ROV Wire Rope

Crew were aligning an ROV to the guide wires on the starboard aft ROV deck of a vessel. While doing this the ROV dome contacted the forward guide wire and it broke free from its termination point on the overhead gantry. This allowed approximately 36m of "2 inch" 6x19 wire rope, weighing 430kg, to fall to the pontoon level and into the water below. The closest worker was approximately 6m away on the ROV deck level and was approximately 9m beneath the gantry tending a tag line while the ROV was being positioned during the incident. The potential severity of this near miss was a fatality.

WHAT WENT WRONG:

- An investigation found that the lack of formalized procedures, reliance on second hand knowledge and the lack of verification on preventative maintenance schemes resulted in the deterioration of equipment, leading to failure.

The corrective actions and recommendations were:

- Use certified guideline wires;
- Install secondary retention on all cursor guideline wires;
- Create specific maintenance procedures for the use and care of cursor guidelines.

Fatalities

7 Confined Space Fatality in Shipyard

A rope access worker lost his life in a fatal incident at a fabrication site. The rope access worker was tasked to descend into a 90cm diameter and 30m depth Riser Guide Tube (RGT) via the rope access method, to retrieve a piece of foam from the RGT. After descending for about 5 minutes, the worker lost contact with his co-workers on top of the RGT. He was rescued and immediately conveyed to hospital by the yard's ambulance, but was pronounced dead by the attending doctor.

WHAT WENT WRONG:

- A Permit to Work was authorized and issued without Job Safety Analysis having taken place for high-risk confined space entry activity;
- Suitable rescue equipment for confined space entry was not available at site location. No written procedure/method statement was available during Job Safety Analysis (or briefed to the work crew before implementation);
- No pre-entry gas test immediately before entry into confined space (or recognition that the activity would itself release confined gas).

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Elimination of need to enter confined space. Method changed to eliminate need to enter confined space;
- Risk assessment – Construction supervision/expertise should attend all risk assessments relating to their area of responsibility;
- Training – shipyard should provide training relating to the correct use of and wearing of personal gas detectors;
- Job Safety Analysis (JSA) meetings on the project must be approved by all parties prior to the associated work permit being granted;
- Emergency extraction – shipyard should ensure that mechanical means of man extraction are available at all times during rope access.

Members may wish to review IMCA SEL 032 – *Guidance on safety in shipyards*.

8 Electrician Fatally Electrocuted

An on-call electrician from the maintenance department was called and to check on a malfunction at a land-based oil installation. Besides checking the wells, he also went to the substation pole. At the substation (on poles), he opened the padlock at the low voltage (LV) distribution board and he disconnected the loads for all seven wells at the site by operating the two shutdown switches (circuit breakers).

Afterwards, the electrician climbed onto the pole and went on the platform to check – very likely – if the high voltage fuse was broken. Once on the platform, he was in the "dead zone" (approximately 1m around 20kV installations) and he was almost immediately electrocuted as a result of an arc-blast. The electrician was found dead on the ground (having fallen from height as well) with severe burns on his back and on his left hand.

WHAT WENT WRONG:

- Inadequate risk assessment/JSA – the electrician was in a hurry, under self-imposed pressure and distracted, which did not allow him to properly assess the risks;
- Weaker safety culture during weekends – safe working rules were less likely to be followed during the weekend;
- Complacency – no one in the organization stopped the electrician working alone on the electrical activities (and also working at height);
- Poor electrical reliability/availability of aged electrical equipment – equipment was compromised and degraded owing to age and poor maintenance;
- Poor safety and security of electrical facilities – there was easy access to the live parts;

- No up-to-date electrical schematics and checklist available at site;
- PTW – there were no competent personnel reviewing and approving electrical work permits. There had been previous fatal incidents from which lessons had not yet been learnt;
- Poor work planning – the maintenance organization did not have sufficient personnel to safely deal with these preventive and corrective maintenance jobs.

CORRECTIVE ACTIONS:

- Structural upgrade of old equipment;
- Review PTW procedure for electrical jobs, sign off by electrical supervisor, in addition to sign off by production co-ordinator and review the roles;
- Implement fully the recommendations of the previous electrical fatality incidents (including locking, signing, obstructing) AND do a root cause analysis why recommendations were not implemented;
- Implement an additional mechanical barrier at distribution cabinet to prevent lone working;
- Ensure checklists and instruction documentation are available in every distribution cabinet;
- Enhance safe behaviour and improve safety culture by:
  - implementing safety behaviour based program
  - consequence management (planned), including. the complacency component for supervisors and managers
  - consider implementing spot checks and management walk-arounds during weekends/call off periods;
- Identify clearly what kind of critical works should take place at weekends and at other times.